(d) delivering the process gas stream at a known, third temperature, whereby the absolute humidity level in the process gas stream is determined from the maximum relative humidity at the second temperature; and

(e) supplying the humidified process gas stream at the third temperature to a fuel cell, and maintaining the third temperature of the process gas stream from step (d) at the third temperature, until the process gas stream reaches the inlet of a fuel cell.

Please delete claim 3.

Please amend claim 4 as follows:

4. A method as claimed in claim 2, which includes injecting steam into the gas stream in an amount sufficient to supersaturate the process gas stream.

Please delete claims 10 to 18.

After claim 9, please insert the following new claims 19 –28.

19. A method as claimed in claim 1, 3 or 4 wherein step (b) comprises passing the process gas stream through a first heat exchanger, and passing a heat transfer fluid through the first heat exchanger to cool the process gas stream to the second temperature, and step (d) comprises passing the process gas stream through a second heat exchanger and passing a second heat transfer fluid through the second heat exchanger to heat the process gas stream to the third temperature.

20. A method as claimed in claim 19, which includes passing the first heat transfer fluid through a first temperature control circuit, including a first heater and a third heat exchanger, for controlling the temperature of the first heat transfer fluid, and passing the second heat transfer fluid through a second temperature control circuit, including a second heater and a fourth heat exchanger, for controlling the temperature of the second heat transfer fluid.

21. A method of humidifying a process gas stream, the method comprising:

(a) humidifying the process gas stream at a first temperature so as to provide the process gas stream with excess humidity;

(b) cooling the process gas stream at a second temperature, lower than the first temperature, to cause condensation of excess moisture;

(c) removing excess condensed moisture from the process gas stream;

(d) delivering the process gas stream at a known, third temperature, whereby the absolute humidity in the process gas stream is determined from the maximum relative humidity at the second temperature;

wherein step (b) includes passing the process gas stream through a first heat exchanger, passing a first heat transfer fluid through the first heat exchanger to cool the process gas stream to the second temperature, and passing the first heat transfer fluid through a first temperature control circuit including at least a third heat exchanger, for controlling the temperature of the first heat transfer fluid.

22. A method as claimed in claim 21, which includes providing, in the first heat transfer circuit, a first heater for heating the first heat transfer fluid.

23. A method as claimed in claim 21, which includes, prior to step (d) heating the process gas stream in a second heat exchanger to the third temperature, whereby the third temperature is greater than the second temperature, and passing a second heat transfer fluid through the second heat exchanger to heat the process gas stream.

24. A method as claimed in claim 23, which includes passing the second heat transfer fluid through a second temperature control circuit including a second heater and

a fourth heat exchanger, for controlling the temperature of the second heat transfer fluid.

25. A method as claimed in claim 24, which includes maintaining the third temperature of the process gas stream, by delivering the process gas stream through a supply line and providing a heating element extending along the supply line.

26. A method as claimed in claim 2, which includes determining the relative humidity of the process gas stream at the third temperature solely from measured values of the second and third temperatures, and setting the second and third temperatures, to obtain a desired level of relative humidity in the process gas stream.

27. A method of humidifying a process gas stream, the method comprising:

(a) humidifying the process gas stream at a first temperature so as to provide the process gas stream with excess humidity;

(b) cooling the process gas stream at a second temperature, lower than the first temperature, to cause condensation of excess moisture;

(c) removing excess condensed moisture from the process gas stream; and

(d) delivering the process gas stream at a known, third temperature, whereby the absolute humidity level in the process gas stream is determined from the maximum relative humidity at the second temperature; and

(e) supplying the humidified process gas stream at the third temperature to a fuel cell, and maintaining the third temperature of the process gas stream from step (d) at the third temperature, until the process gas stream reaches the inlet of a fuel cell.

28. A method as claimed in claim 27, wherein step (d) includes heating the process gas stream to a third temperature greater than the second temperature.